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ABSTRACT

Teachers in El Salvador who participated in a three-month retraining course were given comparable questionnaires during the first and last week of the course, to examine their concepts about instructional television (ITV), professional roles and responsibilities in ITV-aided classrooms, and teachers' problems. Of the 92 teachers who completed the course 72 completed both questionnaires. Because participants in the course were younger, more experienced and better educated than most teachers in El Salvador, the results have limited generalizability. The results indicate that during the course teachers gained a better understanding of the objectives of El Salvador's Educational Reform Plan, that they moved toward a more realistic understanding of the disadvantages as well as the advantages of ITV, that they came to feel ITV in the classroom will require more instead of less class preparation time, and that more attention will have to be paid to teaching principles of problem solving. In addition, by the end of the course the teachers came to expect more of the Educational Reform Plan, in curriculum and organization. (MG)

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THE EL SALVADOR EDUCATIONAL REFORM:

SOME EFFECTS OF THE FIRST TEACHER RETRAINING COURSE

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EDUCATION & WELFARE
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Research Report No. 2

This is one of a series of reports of research on the Educational Reform Program of El Salvador, and especially its use of instructional television. This report has been prepared by members of the Institute for Communication Research, Stanford University, on behalf of the Academy for Educational Development, under contract with the U.S. Agency for International Development.

July, 1969

SUMMARY

Before instructional television broadcasts began in El Salvador, the Ministry of Education assembled 120 teachers for a three-months retraining course. Ninety-two teachers completed the course, and from among them came the first teachers assigned to television classrooms and the first utilization supervisors. A questionnaire was administered on the second day of the course, and a comparable one at the beginning of the last week of the course. Questions were concerned not with the subject matter learned in the course (for example, the New Math), but rather with concepts of the Educational Reform Plan and of instructional television, and in particular the professional roles of teachers, and the problems they face and the professional responsibilities they have in television classrooms. Of the 92 teachers who completed the course, 78 responded to both the pre- and the post-questionnaires; their answers have provided the data for this report.

The teachers in the course were relatively young (42 per cent under 30, 87 per cent under 40), experienced (an average of 10 years of teaching, seven years in Plan Básico), comparatively well educated, and with a diversity of subject-matter backgrounds. Six out of 10 were male. Because the sample was not a random selection from the secondary teacher corps in El Salvador, and also because later courses will last an entire academic year rather than three months, the results can not safely be generalized to other teachers or other retraining

courses. Nevertheless, the questionnaires give some idea of the viewpoints held by Plan Básico teachers and of what a retraining course can be expected to accomplish.

These conclusions emerge:

1. Teachers understood the objectives and projects of the Educational Reform Plan much better at the end of the course than at the beginning (see Table 2 and discussion).

2. Teachers were generally favorable toward ITV (77 per cent named it one of the two most important changes brought about by the Educational Reform -- a larger proportion than named any other change -- and only 9 per cent saw it as a threat to their status or prestige). During the course, however, they moved toward a more realistic and informed appraisal of ITV. They saw more clearly both its advantages (e.g., wider sharing of specialized teachers, and opportunity for a classroom teacher to improve his methods by watching the television teacher), and the disadvantages (e.g., students cannot ask questions of the television teacher). Some of the mystique seemed to be removed from television, and the classroom teachers were apparently thinking more of their responsibility for helping to make it effective. A possible cause for concern, however, may be a marginally significant decrease, during the three months, in the proportion of teachers who felt that the studio and classroom teachers truly share responsibility for a class.

3. Both at the beginning and at the end of the course, teachers

perceived their television-related role as including careful preparation, starting on time, motivating the students, directing lesson-related projects after the broadcast, and answering student questions. There were highly significant changes during the course in the direction of believing that teachers during the post-television period should not simply repeat the television lesson, and that the television classroom teacher would require more, not less, preparation time.

4. Between the beginning and the end of the course, fewer teachers saw their principal classroom tasks as maintaining discipline, molding character, and making the students "perform their tasks"; and many more came to see their task as teaching students the principles of problem-solving.

5. In addition to understanding the Educational Reform Plan more fully, the teachers tended also to expect more of it by the end of the course: notably more adequate curriculum or study programs, and better organization of the system and the school. They thought the most important changes that could be brought to bear on the quality of instruction might be more opportunities for professional advancement, more retraining courses, more and better audio-visual aids, more laboratories and libraries, and more time to prepare for class.

6. Their belief that more teacher-retraining courses are needed increased significantly during the three months. This may be an indirect endorsement of the quality of the course they were taught.

The study

The Ministry of Education of El Salvador provided for extensive teacher-retraining as a part of their Educational Reform Program, which involves far-reaching changes in the curriculum and depends in part on the introduction and use of instructional television. Three months before the televised classes began, 120 Salvadoran teachers were assembled at the teacher-training school in San Andrés for the first of the retraining courses. Of the 120 who started the course, 92 completed it. From these came the first group assigned to teach in the 32 classrooms with television and in the four control classrooms, and also the six utilization supervisors.

The day after the course began, on November 12, 1968, a questionnaire was administered to the student teachers at San Andrés. On January 24, 1969, one week before the end of the course, a second questionnaire was administered. These questionnaires were not primarily concerned with substantive learning from the course -- for example, what teachers had learned about the New Math or the new Social Studies curriculum -- but rather with their concepts of the Educational Reform and of instructional television, their ideas of the strengths and weaknesses of instructional television and of their role as teachers in courses taught with the aid of television, their attitudes toward the problems they faced as teachers, and particularly the problems and the responsibilities they would have in a television classroom.

Of the 92 teachers who completed the course, 78 responded to both the pre- and post-questionnaires (the number was less than 100

per cent chiefly because of absences). The second questionnaire included many items that could be compared with items on the first test, so that it is possible to arrive at some conclusions as to how their concepts and attitudes changed during the course. This is the subject matter of the following report.

The results of this study should not be generalized too far. The teachers who participated were not a random sample of all teachers, or even all Plan Básico teachers in El Salvador, and therefore we cannot say that the results are true of the teacher population in the country. Moreover, the questionnaire instruments were being tested and perfected during the time of the course; these were actually the first tests given as a part of the evaluation program. Finally, the circumstances under which the first training course had to take place, under pressures of time and some confusion concerning assignments, make it all the more necessary to be cautious about overgeneralizing or overinterpreting the results. It will be interesting to compare these data with the results of the second retraining course, which is now in progress at San Andrés, and will continue for an entire academic year rather than three months.

Who are these teachers?

The 78 Plan Básico teachers who responded to both questionnaires had an average of 10 years of teaching experience, of which seven, on the average, were spent at the Plan Básico level. Ten per cent had more than 20 years of experience. Most of them had been trained for

the Primary level, and entered Plan Básico teaching (seventh through ninth grades) later. They were relatively young: 42 per cent under 30, 88 per cent under 40. The average age was 32. All of them had at least the equivalent of a secondary education, and more than one-third had one or more years of higher education, either in the Superior Normal School (Escuela Normal Superior) or the University. The largest group -- 27 per cent -- had taken a major or minor in social studies; 18 per cent in mathematics or physics; 17 per cent in biology or chemistry; 13 per cent, Spanish and literature; 10 per cent, English. Thus, as Table 1 shows, they were generally young, experienced, and relatively well educated with a diversity of subject-matter backgrounds, and they numbered among them more males (60 per cent) than females.

They were assigned almost equally to one of the two general areas of study for the retraining course: science or humanities, the former including mathematics along with natural sciences, the latter including Spanish and social studies. English was offered as a voluntary subject open to members of both groups, and 50 per cent of the teachers elected to take it.

Additional background material on the teachers was gathered, but is not relevant to this report.

TABLE 1

Background Information on Teachers Participating in the Three Months Retraining Course

SEX	N	%
Women	31	40
Men	47	60

Age groups	N	%
Over 50 (born 1910 - 19)	2	2.6
40 - 50 (born 1920 - 29)	7	9.0
30 - 40 (born 1930 - 39)	36	46.2
20 - 30 (born 1940 - 49)	33	42.3

Teacher education	N	%
Secondary and teacher preparation		
"A" Classification	22	28.2
Bachillerato	13	16.7
Class "A" and Bachillerato	38	48.7
Other	5	6.5
Superior or university preparation	**N**	**%**
No superior university preparation	45	57.7
Normal Superior School	15	19.2
1 or 2 years university	14	17.9
3 or more years university	2	2.6
No response	2	2.6

Entered teaching	Years experience	N	%
1930-39	30 or more	1	1.3
1940-49	20 to 29	8	10.3
1950-59	10 to 19	27	34.6
1960 or later	Less than 10	38	48.7
	No response	4	5.1

Entered secondary teaching	Years experience	N	%
1940-49	20 to 29	3	3.8
1950-59	10 to 19	17	21.8
1960 or later	Less than 10	49	62.8
No secondary experience		9	11.6

How did they view Educational Reform?

The data of this study indicate that the teacher-training course had a clear effect on the teachers' awareness of and knowledge of educational reform. As Table 2 demonstrates, at the end of the course considerably more teachers claimed knowledge of the Educational Reform than did so at the beginning. At the end of the course approximately twice as many teachers, as at the beginning, said they knew the principles on which the Salvadoran Educational Reform Program was based. While substantive knowledge specifically about the Salvadoran Reform was not tested, at a more general level there was a large increase in the number of teachers who said they knew of eight or more educational reform projects or principles which had been applied in Central American education over the past few years. In addition, there was a similar gain in the proportion of teachers who correctly identified four or more of these principles. Taken together, these three items illustrate a clear increase in the proportion of teachers who indicated awareness and knowledge of the principles of educational reform in general. In short, the teacher-training course served as a sharpening function, attuning the teachers to the principles on which educational reform rests.

It should be noted also, however, that the teachers emerged from the course with high expectations of what could be done to improve the quality of education in El Salvador. We shall say something about these expectations later in the report.

TABLE 2

Percentage Distribution of Teachers' Knowledge of Educational Reform[a]

Response	Before (N = 78)	After (N = 78)
Claimed to know principles on which reform was based	37%	68%****[b]
Claimed to know eight or nine concepts or projects	70	94****
Correctly identified 4 or more projects correctly	40	65****

a. The percentages in this and all following tables do not sum to 100 per cent across the rows because only positive responses are represented. The percentages do not sum to any meaningful total down the columns because, on the various questions, some teachers gave fewer responses than asked for and some gave more than asked for. Significance tests were computed independently for each item or response.

b. All significance tests were computed by the McNemar Test for the significance of differences between nonindependent proportions (see, McNemar, Q. Psychological Statistics, New York: Wiley, 1962). * = $p < .10$; ** = $p < .05$; *** = $p < .01$; **** = $p < .001$.

What were their attitudes toward ITV?

Asked to name the two changes they considered most important in the Educational Reform Program, 77 per cent of the teachers named instructional television, 58 per cent the new curriculum, 46 per cent the teacher-retraining, and the same proportion the creation of full-time teaching positions in Plan Básico.*

The data from the two questionnaires indicate, however, that one result of the course was a more realistic viewpoint toward what could be expected of television in the classroom. Tables 3 and 4 should be looked at together for some insight into the teachers' concepts of ITV. The only two significant changes during the course in their ideas of the disadvantages of television (Table 3) are an increase in the proportion who cited the most frequent criticism -- that students cannot ask questions of the television teacher --, and in increase in the proportion who concluded that television cannot do anything a good teacher cannot do with adequate materials. These changes can be interpreted as a growth in realism and a growth in professional confidence in their own capabilities. It should be noted that these teachers apparently entered their own television classrooms, after the course, with a considerable residue of skepticism about what ITV could accomplish: it teaches facts, not concepts (37 per cent); students

*Before the Educational Reform Program, a Plan Básico teacher typically held more than one teaching job, or combined teaching with something else.

may lose interest after a few weeks (27 per cent); the programs may cover too much material for the student (21 per cent). On the other hand, only 9 per cent felt that the classroom teacher may suffer a loss in professional prestige in comparison with ITV. They were more confident at the end of the course that television could be depended upon technically, although the difference was not statistically significant.

Table 4, listing some possible advantages of ITV as seen by the teachers, indicates several positive changes in their perception of ITV, and also familiarity with the chief advantages commonly attributed to television in the classroom. At the end of the course, significantly higher proportions of the teachers said that the talent of more specialized teachers can be widely shared via ITV (69 per cent at the end), and also that the classroom teacher can improve his methods by watching the TV teacher (60 per cent). Twenty-eight per cent, at the conclusion of the course, mentioned the advantage of common examinations, and 29 per cent said that classroom teachers would learn to organize their schedules better. The teachers divided exactly evenly on the question of whether students would be likely to learn more from television. Finally, two negative changes suggest that some of the mystique had been taken off television during the course, and had been replaced by more realistic views of what might actually happen when it was used in the classroom. There were significant decreases between the beginning and the end of the course in the proportions who believed that students would be more interested

in their classwork when they had television, and that all the prescribed materials could be covered on schedule when television paced the course. The students might not keep up, and television would not be able to make allowance for individual differences!*

(see Tables 3 and 4 next page)

*These two complaints were voiced by some teachers in the first trimester of actual ITV use, especially with regard to one course. This problem has subsequently been taken care of by the production staff.

TABLE 3

Percentage Distribution of Teachers' Perceptions of the Three Disadvantages Associated with ITV

Response[a]	Before (N = 78)	After (N = 78)
Students cannot ask the television teacher questions	46%	60%**
Television teaches facts, not concepts	35	37
Television can't do anything a teacher can't do with good materials	22	36*
Students lose interest after a few weeks	18	27
Programs will not always be viewed well because of technical difficulties	33	23
Programs cover too much material for the student	13	21
The classroom teacher suffers a loss in professional prestige before students and colleagues	13	9
It is difficult to maintain discipline	4	6

* = $p < .10$; ** = $p < .05$; *** = $p < .01$; **** = $p < .001$.

a. Translation of the question: "The following list presents some of the problems and disadvantages that ETV has encountered in countries where it has been used. Mark with an X the three problems you think could arise in this country."

TABLE 4

Percentage Distribution of Teachers' Perceptions of the Three Advantages Associated with ITV Most Salient to El Salvador

Response	Before (N = 78)	After (N = 78)
The talent of the more specialized teachers can be more widely shared[a]	56%	69%*
The classroom teacher can improve his methods by watching the TV teacher	36	60***
Students learn more from ITV	42	50
Students are more interested in their classwork	46	29**
Teachers learn to organize their schedules better	23	29
Common exams are possible	22	28
Students learn to study by themselves	21	22
All the prescribed materials can be covered on schedule	32	14***

* = $p < .10$; ** = $p < .05$; *** = $p < .01$; **** = $p < .001$.

a. Translation of the question: "In the following list you will find some advantages and benefits that ETV has brought other countries. Mark with an X the three you think are most likely to be realized in this country."

It may be assumed, then, that the teachers who completed the course at San Andrés left with a generally favorable, but still realistic and open-minded, idea of ITV. Half or more of them believed that the classroom teacher could improve his own teaching by watching the telemaestro, that students might learn more from television, and that there would be an advantage in sharing the talents of specialized teachers -- but also that the lack of two-way communication between student and studio would present a problem. One of the most favorable indicators is that less than one in 10 saw, or admitted that he saw, television as a threat to the professional status or prestige of classroom teachers. Generally favorable, they nevertheless perceived both advantages and disadvantages in a television classroom. What they seemed to be saying is that there is no magic in television, and that the classroom teacher still has a very large role even in a television classroom.

How did they see their role in an ITV classroom?

Table 5 is therefore interesting because it throws light on how the teachers did perceive their classroom role. In general, the answers are what school directors and supervisors would like to hear: preparation time, pre-television motivation, post-television activities and answering of individual questions, starting on time so as to make full use of the pre-television period, carrying out lesson-related projects suggested by the television teacher but supervised by the classroom teacher -- an overwhelming majority of the teachers said that each of these is an important part of the classroom teacher's role.

The most interesting answers, though, are the three items in which statistically significant changes occurred between the beginning and the end of the course. For one thing, there was a definite increase in the number of teachers who came to believe that teaching with television might require more, rather than less, preparation on the part of the classroom teacher. Second, there was a highly significant increase in the proportion of those who emphasized that the post-television activities in the classroom should not simply repeat the television lesson. In other words, rather than rote drill intended to make sure that the facts and statements of the ITV lesson can be recalled and repeated, the classroom teacher should try to go on from the television lesson and teach the concepts in a way that relates them to individual needs, interests, and activities. A school official concerned with modernizing education should find that change highly encouraging.

Finally there is a marginally significant decrease in the proportion of teachers who believe that the television and the classroom teachers share the teaching responsibility, each being responsible for different parts of the task. The change is only from 73 to 60 per cent, so that at least three-fifths of the teachers still held to the idea of shared responsibility. But nevertheless, the fact that teachers were somewhat less sure after the course that the TV and classroom teachers really have a shared responsibility in teaching is an important and delicate point, worth further exploration, and worth attention by those who would like to communicate this idea to classroom teachers.

TABLE 5

Percentage Distribution of Teachers' Perceptions of Their Role in a Television Class

Response	Before (N = 78)	After (N = 78)
The classroom teacher needs more time for preparation	73%	87%**
One of the classroom teacher's most important tasks is pre-telelesson motivation	86	90
The class should be started on time so as to make full use of the ten-minute motivation period	64	59
The telelesson might facilitate a better grasp of the subject matter by suggesting lesson-related projects to be undertaken by the students supervised by the classroom teacher	91	91
After the telelesson, the classroom teacher should distribute the pertinent materials which should not be used to simply repeat the telelesson	64	86***
The most important way the teacher can facilitate the success of the telelesson is to be prepared to answer questions	74	65
The television and classroom teachers share the teaching role, being responsible for different phases of the process	73	60*

* = $p < .10$; ** = $p < .05$; *** = $p < .01$; **** = $p < .001$.

How do they see their professional role in general?

The purpose of the teacher-retraining in El Salvador is to contribute to the quality of instruction in general, only secondarily to television teaching. Therefore, Table 6 is particularly interesting because of the changes it reveals during the San Andrés course. There are only four statistically significant changes. Two of these have to do directly with discipline and control by the teacher -- some of the qualities that Beeby in his book The Quality of Education in Developing Countries cited as chief objectives of schools in early stages of educational development. At the end of the course, significantly fewer teachers thought that to "maintain discipline and mold character" and "have students perform their tasks", were among their principal obligations in the classroom. The decrease in the proportion of teachers who thought their primary duty was to stimulate study may reflect this same attitude. On the other hand, significantly more teachers -- and more teachers than cited any other goal -- felt that a chief obligation was to "teach principles that help the student solve problems." This is one of the characteristics Beeby cites for schools in an advanced state of development. If this change is reflected in classroom practice, then presumably a major goal of the teacher-retraining will have been realized.

TABLE 6

Percentage Distribution of Teachers' Perceptions of Their Two Principal Obligations in the Classroom

Response	Before (N = 78)	After (N = 78)
Teach principles that help the students solve problems[a]	50%	64%**
Stimulate the students so they study without feeling forced to do so	46	33*
Maintain discipline and mold character	27	9***
Have students perform their tasks	17	5**
Explain the lesson	13	8
Make sure all students pass the final examinations	6	3
Have the students recite the lesson	1	0
Make the students memorize literally	0	0

* = $p < .10$; ** = $p < .05$; *** = $p < .01$; **** = $p < .001$.

a. Translation of the question: "The principal obligation of the classroom teacher consists in: (mark the response you think is the most important with an X)".

Although it would be unwise to overinterpret these results, they suggest a trend, during the three-months course, not only toward better knowledge of the Educational Reform Plan and toward a more realistic concept of ITV and their role in connection with it, as we have said, but also toward a heightened sense of professional competence and responsibility, and toward a tendency to see the problems of El Salvador schools in systemic rather than individual terms.

Table 7 summarizes the answers given by these teachers when asked to name the three most important problems they faced in their work. There are spectacular changes in this list between the beginning and the end of the San Andrés course. Student conduct, which had been mentioned as a major problem by 40 per cent of the teachers on the second day of the course, had fallen off to 4 per cent by the time of the post-test. This can be interpreted either as an indication of rising confidence in being able to take care of a problem like that, or that they had come to perceive other problems not so well understood or articulated before the course. Thus, for example, whereas at the beginning as well as the end of the course, the teachers seemed to feel that teaching materials were inadequate, during the course something happened that led them to perceive the inadequate and overburdened programs of the old Plan Básico curriculum, and the organization of the educational system, as major problems. The proportion citing inadequate and overburdened programs rose from 3 to 67 per cent in three months; the proportion citing poor organization rose from 3 to 33 per cent. It is possible to conjecture that they

had an opportunity to see what efficient organization and a more efficient curriculum might accomplish, or had an opportunity to take a broader view of what made the difference in classroom performance. On the other hand, by the time the course ended, a significantly larger proportion of them saw the poverty and unfavorable environments of their students as a major problem, and this too suggests a trend toward systemic rather than individual explanations.

(see Tables 7 and 8 next page)

TABLE 7

Percentage Distribution of Teachers' Perceptions of the Three Most Important Problems Confronting Them in Their Work

Response	Before (N = 78)	After (N = 78)
Inadequate and overburdened programs (i.e., the old Plan Básico curriculum)[a]	3%	67%****
Inadequacy of teaching materials	58	59
Poor organization of the educational system and the school	3	33****
Lack of cooperation from students, parents, and colleagues	37	33
Poverty of the students and their environment	12	29**
Inadequate teacher preparation	3	8
Student conduct in school	40	4****

* = $p < .10$; ** = $p < .05$; *** = $p < .01$; **** = $p < .001$.

a. Translation of the question: "Which are the most important problems that you frequently face in your work? (Mark the three you consider most important.)"

TABLE 8

Percentage Distribution of Teachers' Identifications of the Three Most Important Changes That Might Be Brought to Bear on the Educational System

Response	Before (N = 78)	After (N = 78)
More opportunities for professional advancement[a]	69%	73%
More teacher-retraining courses	42	60**
More and better audio-visual aids	71	60
More laboratories	54	47
More libraries	42	35
More time to prepare for class	3	15***
More textbooks	9	13
Opportunities to read journals on educational innovations	4	8
Better information about new projects of the Ministry of Education	14	8

* = $p < .10$; ** = $p < .05$; *** = $p < .01$; **** = $p < .001$.

a. Translation of question: "Mark with an X in the following list what you consider the three most important aspects that can be brought about within the educational system."

Early in this report we suggested that at the end of the course these teachers held higher expectations of what the Educational Reform might contribute to the school system. This is illustrated by Tables 7 and 8. They seem to want better teaching materials, revised and streamlined curricula, more efficient organization, more and better audio-visual aids, more laboratories and libraries, and more time to prepare for class. They also feel -- and a significantly higher proportion of them held this viewpoint than did so at the beginning of the course -- that more teacher-retraining courses would be one of the most important contributions that could be made to the quality of instruction in El Salvador. Sixty per cent of the teachers listed more such courses among their three "most important" and desirable changes. Only "more opportunities for professional advancement" received more votes. This seems to indicate a rising sense of professionalism, and the directors of the November-January course would seem to be justified in considering the rising opinion of the usefulness of retraining courses as a vote of approval for the course they gave.